MONITORING YOUR WMA PROJECTS

A document to help facilitate monitoring of your WMA projects
Spring 2009

QUANTITATIVE MEASURE(S)

At minimum, some level of Quantitative measure:

-This can be: plant counts, net over gross acres, percent cover, etc.
(See page 2 for percent cover monitoring options)

-A comparison has to be made between years (previous year and present year)
% change is a good measure btw years
Graphs (bar charts, etc.) are an excellent way to report change btw years

QUALITATATIVE MEASURE(S)

Qualitative monitoring can supplement quantitative measures. Measures can include:

-Visual assessment (ie: How does it look compared to last year?)

-Photo points. Photo points can be ineffective though… since we are dealing often with small populations and eradication. Historical photos of what the site originally looked like, compared to now, is the best case scenario… "a picture is worth a thousand words...".

Example description of monitoring plan included in BASE WMA example proposal:

"A project report will be submitted at the completion of the contract and will include the following information: net acres or number of plants treated if less than 100 plants, gross area surveyed, control tool utilized, % change (reduction) between visits, graphs showing differences in acres treated between years for each species addressed, and photographs."

Example Sampling Methods for Vegetation Monitoring

(To be used for measuring changes in % cover of a weed species)

We would like to measure the reduction in weed cover due to different WMA control projects. This can be done in two ways. The preferred method is to collect weed cover data (% cover) before and after treatment. A second method includes comparing weed cover in a location after treatment to weed cover in a "control" or an untreated location. The control site is ideally chosen prior to treatment, but can be chosen after treatment if necessary.

For each treatment area, 3-5 estimates of percent cover must be made. Number of treatment areas may vary depending on the project. One treatment area may be an adequate representation of one entire project. Different treatment areas within one project should be sampled if they contain noticeably different weed densities and/or environmental characteristics. We suggest the following methods to use when sampling (photographic monitoring is recommended to accompany all sampling methods).

Method #1. Point – Intercept method.

Lay out a 20 meter measuring tape randomly positioned in the project site. Some subjectivity in transect placement is expected due to distribution patterns of the weed species. At every 2-meter mark along the tape place a meter stick, pin-flag or other straight object perpendicular to the ground (starting at the 2 meter mark). Record a "hit" if the meter stick hits the weed and a "miss" if it does not. This will result in a number of hits out of 10 placements. The following calculation can then be made:

*(Total hits / 10 placements)*100 = percent "hits" or percent weed cover.*

Do this 3 – 5 times per project site.

Method #2. Quadrat sampling method.

Randomly position 3-5, $1m^2$ quadrats within treatment or control areas. Quadrats can be delineated with meter sticks, tape measures, or cut PVC pipe. Visually estimate the percent cover of the quadrat covered by the weed species (estimates my be rounded to the nearest 5%. For example: 5%, 10%, 50%, 75%).

Method #3. To be used in addition to method #1 and method #2.

Photo points: photos retaken each time from the same spot including the same picture frame/landmarks, etc. will give a nice visual representation (often more convincing than data) of the success of your project. Things to consider when choosing a photo point include: whether to include the sampled spot (transect spot), capturing habitat conditions, and time of year (consistent with regard to plant life-stage: flowering, rosette, bolting, color).

Reference:

Measuring and monitoring plant populations by BLM and The Nature Conservancy

Bureau of Land Management National Business Center BC-650B
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